UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,045	01/15/2002	Ziv Z. Hellman	3394p007x2	3464

8791 7590 09/28/2005

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
SEVENTH FLOOR
LOS ANGELES, CA 90025-1030

EXAMINER	
VU, TUAN A	

ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 09/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/053,045	HELLMAN ET AL.	
	Examiner	Art Unit	
	Tuan A. Vu	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/15/2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1-140* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-140* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 June 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20020228*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: *duplicated IDS*.

DETAILED ACTION

1. This action is responsive to the application filed 1/15/2002.

Claims 1-140 have been submitted for examination.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-33, 34-69, and 135-137 and are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5 and 28 of copending Application No. 10104785 (hereinafter '785) in view of Klein et al., "The Relation between Ontologies and schema-languages", 2000. Following are examples of conflicting claims:

As per instant claims 1, 34 and 135, copending '785 claims 5 and 28 also recite a method or system comprising transformation process (broker plug-in -- re '785 claim 1, 26) that upon receiving a source application conforming to a source data schema and a target application conforming to a target data schema (re '785 claim 1, 26), derives as output transformation that transform data that source data schema to the target data schema, using a ontology model (re

'785 claims 3-5, 26-28); but claims 5 and 28 do not recite mapping source and target data schema into a ontology model and based on such mappings of both source and target data schema to derive that transformation (as in instant claims 1, 135 or instant claim 34). But based on the reciting of '785 claims 5 or 28 of semantic model being a ontology model the well-known concept of mapping a specification of a software document or domain application into such model is recognized; and based on the mapping from xml document from and to a ontology model by Klein (pg. 7.6-7.9), the xml schema mapping by Klein in conjunction with '785 semantic model would have rendered obvious as to why one of ordinary skill in the art would be motivated to map source schema and target schema as recited in '785 into the '785 ontology model in order to effect the '785 semantic model based transformation because the benefits in possibilities of transformation from/to such model based on abstract concepts of a model when used in conjunction with the richness and versatility of schema and extensible language.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

> The Federal Circuit has recently applied the practical application test in determining whether the claimed subject matter is statutory under 35 U.S.C. § 101. The practical application test requires that a " useful, concrete, and tangible result" be accomplished. An "abstract idea" when practically applied is eligible for a patent. As a consequence, an invention, which is eligible for patenting under 35 U.S.C. § 101, is in the "useful arts" when it is a machine, manufacture, process or composition of matter, which produces a concrete, tangible, and useful result. The test for practical application is thus to determine whether the claimed invention produces a "useful, concrete and tangible result".

5. Claims 1, 70, and 102 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

As per claim 1, the claim only recites a method of receiving source and target schemas, mapping such schemas onto a model and deriving a transformation data conforming to source schema to the target schema data. There is no teaching in the claim that enable one skill in the art to construe all these steps to be done with a hardware support that is tangible in order to yield a tangible and concrete result; because having a model or schema on paper and scribbling transformation thereon with a pen would also perform the same steps. Therefore, the claim amounts to a non-practical an abstract idea with no tangible concrete result, thus rejected for leading to a non-statutory subject matter.

As per claim 70, this claim also recites a method of receiving a schema and building a model to embed the schema. All this amounts to a process that can be done via a pen and paper context and the claim is hence rejected for leading to non-statutory subject matter.

As per claim 102, the system claim only recites entities such as schema receiver and model builder, which can be construed at best as software implemented from the specifications; but lack explicit teaching as to the tangible support to implement a system. This system claim amounts to a mere non-practical idea; and is rejected for leading to a non-statutory subject matter.

Dependent claims 3-6; 72-77, 86, 89-93; 106-108, 122-126 are also rejected for not remedying to the deficiencies of the base claims.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 137 and 140 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The element recited as

'...carrier ware ...' is not supported by any explicit description in the specification. These limitations would be treated as just regular program media as readable by a computer.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-8, 20, 24, 26-41, 70-71, and 135-140 are rejected under 35 U.S.C. 102(e) as being anticipated by Wachtel, USPN: 6,847,947 (hereinafter Wachtel).

As per claim 1, Wachtel discloses a method for deriving transformations for transforming data from one data schema to another, comprising:

receiving a source data schema (e.g. Fig. 14) and a target data schema (e.g. Fig. 17);

mapping the source data schema into an ontology model; mapping the target data schema into the ontology model (e.g. Fig. 6-9; *xml, workflow, map* – col. 5, line 62 to col. 7, line 14 -

Note: XML information/metadata when parsed by XPATH into a tree reads on a schema of definition); and

deriving a transformation (e.g. Fig. 18) for transforming data conforming to the source data schema into data conforming to the target data schema (e.g. Fig. 6-9; Fig. 17-18 – Note: output response based on mapping against ontology metastore based on service and output requests – Fig. 14, 17 -- reads on source data schema in request conforming to target schema), using the ontology model.

As per claim 2, see ontology (col. 5, line 62→ col. 7, line 14).

As per claim 3, see ontology (e.g. *runtime ...populated* - col. 7, lines 23-65; Fig. 4).

As per claim 4, see Wachtel for external format (e.g *xml document*– col. 7, lines 4-22) into internal format (e.g. *atomic semantic instances* - Fig. 4).

As per claim 5, see generating model instances (*runtime ...populated* - col. 7, lines 23-65; Fig. 4)

As per claim 6, Wachtel discloses initial model (e.g. *data fields* – col. 9, lines 40-44; col. 13, lines 1-26) being populated into runtime (ontology workflow model) with abstraction instances based on LSO mapping (Fig. 6-9; col. 14, line 60 to col. 15, line 41)

As per claim 7, refer to claim 4.

As per claim 8, Wachtel discloses code for transforming data conforming to the source data schema into data conforming to the target data schema (e.g. Fig. 6-9; Fig. 17-18 – Note: output response based on mapping against ontology metastore based on service and output requests – Fig. 14, 17 -- reads on source data schema in request conforming to target schema; XSL - col. 25, lines 41-47).

As per claim 20 Wachtel discloses that the source data schema is a source document schema describing source documents (e.g. Fig. 14), and wherein the target data schema is a target document schema describing target documents (e.g. Fig. 17-18 – Note: XML schema reads on describing target documents being defined by such schema).

As per claim 24, Wachtel discloses wherein the source document schema is a source XML schema describing source XML documents, wherein the target document schema is a target XML schema describing target XML documents, and wherein the source XML schema and the target XML schema each describes at least one XML complexType having at least one XML element or XML attribute (e.g. Fig. 14, 18 – Note: type as defined in a corresponding DTD having at least one XML element or XML attribute reads on complexType).

As per claim 26, Wachtel discloses XSLT script (col. 7, lines 10-14).

As per claim 27, Wachtel discloses that said mapping a source data schema and said mapping a target data schema each comprise: identifying at least one class in the ontology model corresponding to at least one XML complexType; and identifying at least one property or composition of properties in the ontology model corresponding to at least one XML element or XML attribute (*class* – col. 11, lines 45 to col. 12, line 19; Fig. 4-7).

As per claim 28, Wachtel discloses that said deriving comprises expressing XML elements and XML attributes of the target XML schema in terms of XML elements and XML attributes of the source XML schema (e.g. Fig. 6-9; Fig. 17-18 – Note: output response based on mapping against ontology metastore based on service and output requests – Fig. 14, 17 -- reads on source data schema in request conforming to target schema, i.e. expressing elements required from source XML in terms of elements in the output XML).

As per claim 29 Wachtel discloses said expressing is performed recursively through XPath paths (Note: parsing a XML schema according to W3C standard requires a Xpath and a DOM tree traversal; hence the Xpath recursive traversal is disclosed).

As per claim 30, Wachtel discloses wherein at least one dependency exists among properties in the ontology model, and wherein said deriving further comprises translating the at least one dependency among properties in the ontology model as at least one dependency between target XML elements and source XML elements (e.g. Fig. 3, 4, 5, 7, 17).

As per claim 31, Wachtel discloses applying the XSLT script to at least one source XML document to generate at least one target XML document (re claim 26).

As per claims 32 and 33, Wachtel discloses single (Fig. 1) or multiple databases (Fig. 8).

As per claim 34, Wachtel discloses a system for deriving transformations for transforming data from one data schema to another, comprising:

a schema receiver receiving a source data schema and a target data schema (e.g. Fig. 14; Fig. 17);

a mapping processor mapping a data schema into an ontology model (e.g. Fig. 6-9; *xml, workflow, map* – col. 5, line 62 to col. 7, line 14); and

a transformation processor deriving a transformation for transforming data conforming to the source data schema into data conforming to the target data schema, based on respective source and target mappings generated by said mapping processor (Fig. 6-9; Fig. 17-18 – Note: output response based on mapping against ontology metastore based on service and output requests – Fig. 14, 17 -- reads on source data schema in request conforming to target schema)

for mapping said source data schema and said target data schema into a common ontology model.

As per claims 35-41, these claims correspond to claims 2-8 respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claim 70, Wachtel discloses a method for building an ontology model into which data schema can be embedded, comprising:

receiving at least one data schema (e.g. Fig. 14, 17); and

building an ontology model into which the at least one data schema can be embedded (Fig. 6-9; *xml, workflow, map* – col. 5, line 62 to col. 7, line 14; *runtime ...populated* - col. 7, lines 23-65; Fig. 4).

As per claim 71, refer to claim 2.

As per claim 135, Wachtel discloses an article of manufacture including one or more computer-readable media that embody a program of instructions for transforming data from one schema to another, wherein the program of instructions, when executed by a processing system, causes the processing system to:

receive (source data schema and a target data schema);

map the source data schema (into an ontology model);

map the target data schema (into the ontology model); and

derive a transformation (for transforming data conforming to the source data schema into data conforming to the target relational database schema, using the ontology model); all these limitations having been addressed in claim 1 above.

As per claims 136-137, see Wachtel Fig. 1, col. 30-31: claims 39, 56, 57.

As per claim 138, Wachtel discloses an article of manufacture including one or more computer-readable media that embody a program of instructions for transforming data from one schema to another, wherein the program of instructions, when executed by a processing system, causes the processing system to:

receiving at least one data schema (e.g. Fig. 14, 17); and

building an ontology model into which the at least one data schema can be embedded (Fig. 6-9; *xml, workflow, map* – col. 5, line 62 to col. 7, line 14; *runtime ...populated* - col. 7, lines 23-65; Fig. 4).

As per claims 139-140, see Wachtel Fig. 1, col. 30-31: claims 39, 56, 57.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 9-19, 21-23, 25, 42-69, and 72-134 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wachtel, USPN: 6,847,947, further in view of Lindberg et al., USPN: 6,732,109 (hereinafter Lindberg)

As per claims 9-10, Wachtel does not explicitly disclose that (re claim 9) wherein the source data schema is a source table schema describing source data tables, wherein the target data schema is a target table schema describing target data tables, and wherein the source table schema and the target table schema each describes at least one table having columns; and that (

re claim 10) wherein the source table schema is a source relational database schema describing source relational database tables, wherein the target table schema is a target relational database schema describing target relational database tables. Wachtel discloses, from figures 3, 8, 13, that transformation is an SQL query in that Wachtel discloses a query system involving a database search (Fig. 3, 8, 13) and a service to fulfill seach in database based on XML specifications and then update database thereafter (*updates database tables* - col. 14, line 50 to col. 15, line 67) and database used in conjunction with modeling framework can be typified by Lindberg in which XML specifications can be mapped into properties relationships (col. 8, line 33 to col. 14, line 10). It would have been obvious for one skill in the art at the time the invention was made to implement the XML schema as parsed by Wachtel in the assimilation workflow instance so that both the target and source schemas correspond respectively to the database tables as shown by Lindberg, having relational DB constructs because schema is a fundamental means by which a relational database is designed/implemented and XML schema used to update records of data as suggested by Wachtel would be of better use if such XML schema is such as it corresponds the database tables upon which Wachtel's method is to fulfill client queries -- to fetch DB data and for updating-- it as purported above by the RDBM of Lindberg and the update approach by Wachtel.

As per claim 11, Wachtel discloses creating class and properties (*class* – col. 11, lines 45 to col. 12, line 19) and identifying at least one class in the ontology model corresponding to at least one table; and identifying at least one property or composition of properties in the ontology model corresponding to at least one table column. The mapping of metadata/specification data with the database tables has been rendered obvious from claims 9-10 above.

As per claim 12, Wachtel based on the rationale of the rejection in claim 9-10; and the teaching from deriving class and properties claim 11, discloses deriving comprises: labeling properties of the ontology model with symbols; converting at least one column in the source relational database schema into at least one source symbol; converting at least one column in the target relational database schema into at least one target symbol; and expressing the at least one target symbol in terms of at least one source symbol.

As per claim 13, Wachtel discloses composition of properties (e.g. Fig. 4, 5, 7, 17).

As per claim 14, Wachtel does not explicitly discloses wherein at least one dependency exists among properties in the ontology model, and wherein said deriving further comprises translating the at least one dependency among properties in the ontology model as at least one dependency between target relational database columns and source relational database columns, and wherein said expressing incorporates the at least one dependency between target relational database columns and source relational database columns. But in view well-known practices at the time the invention was made where relational databases are used with the construction in information model such as typified by Lindberg in which XML specifications can be mapped into properties relationships (col. 8, line 33 to col. 14, line 10), the concept of translating input schema to output schema based on such database-based dependency of data would have been inferred from the teachings by Wachtel as addressed in claims 9-10 using XML schema. Hence based on the teachings by Lindberg, it would have been obvious for one of ordinary skill in the art at the time the invention was made to implement the XML schema mapping of Wachtel so that it is added with the relational data dependency as by Lindberg so that output schema derived from input schema is founded on the dependency of properties as set forth in the relational

database tables because this would facilitate the developing of results and fulfill the requirements owing to the hierarchy of properties or layering of requirements thus enabling time efficient mapping and model developing as purported by Lindberg (see Background of invention) which lead to efficient gathering of required data to produced the desired output result for the DB query by Wachtel.

As per claims 15-16, Wachtel does not expressly disclose wherein said expressing uses expressions involving arithmetic operations and that said expressing uses expressions involving character string operations. But the query operations to implement a search as by Lindberg or intended by Wachtel would have inherently encompassed operations using character string or arithmetic/logical operator to query a specific data record.

As per claim 17, Wachtel discloses applying the query to at least one source relational database table to populate at least one target relational database table (e.g. Fig. 3, 8, 13).

As per claims 18-19, Wachtel discloses single (Fig. 1) or multiple databases (Fig. 8).

As per claim 21, Wachtel does not explicitly discloses that the source document schema is a source DTD describing source XML documents, wherein the target document schema is a target DTD describing target XML documents, and wherein the source DTD and the target DTD each describes at least one XML element or XML attribute. Official notice is taken that at the time the invention was made a XML document and its attributes being accompanied with definition file such as a DTD document was a well-known concept. Hence in case Wachtel's XML schema definition does not already include such DTD schema, it would have been obvious for one skill in the art at the time the invention was made to provide such DTD schema along with the XML documents so that both source XML and target XML are defined according to the

well known concept because without definition the attributes and properties of the XML would not be proper to be parsed by the XML parsing technologies as implemented by W3c standards.

As per claims 22 and 23, Wachtel discloses the transformation is using J2EE query/messaging service (e.g. col. 9, lines 8-26) with support of XML but does not expressly mention Xquery but this limitation would have been obvious because based on the J2EE and BEA framework, query against RDMS using Java would have been more beneficial if implemented with Xquery using the technology based on XML structures and its metastore as disclosed by Watchtel (Fig. 1) and Wachtel discloses XSLT script (col. 7, lines 10-14)

As per claim 25, the Xquery limitation would have been obvious by virtue of the rationale set forth in claim 22.

As per claims 42-44, these claims correspond to claims 9-11 respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claim 45, Wachtel discloses presents a user interface to enable workflow assembling and application of integration rules using repository data (Fig. 1) but does not explicitly disclose wherein said property identifier presents a user with a choice of at least one property in the common ontology model that may correspond to a given table column. The presentation of properties using a model to map such property for a query against a column in a database has been addressed above using Lindberg (e.g. col. 7, line 47 to col 14, line 17). In view of the rationale as set forth in claim 9-10 and the user interaction as presented in a ontology model as endeavored by Wachtel, this limitation would have been obvious for the same reasons as set forth in claims 9-10, because of the purpose of ontology-based modeling is to allow user to

customize requirements of a application based on some schema mappings and these are both disclosed in Wachtel and Lindberg.

As per claims 46 and 47, in view of rationale in claim 42 and the class and properties being identified as to correspond to given column or a target table (Note: a key for a table is inherent in DB construct for facilitating query and normalization of data), as addressed in claim 11, these claims are rejected with the rationale as set forth therein.

As per claim 48, Wachtel discloses labeling properties with symbols (see Fig.6; object 112 – Fig. 3); and combined with the teaching by Lindberg as in claims 42-43, converting at least one column in the source relational database schema into at least one source symbol, and converting at least one column in the target relational database schema into at least one target symbol; and expressing the at least one target symbol in terms of at least one source symbol (Note: the transformation as addressed in claim 34 combined with Lindberg would make it obvious the converting column/symbol limitation).

As per claims 49-52, and 54-55, these claims correspond to claims 13-16, 18-19 respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claim 53, Lindberg discloses mapping applications to specific constructs of relational DB table (col. 7, line 47 to col 14, line 17) and Wachtel discloses mapping with eventual update of database (col. 14, line 50 to col. 15, line 67). It would have been obvious for one skill in the art to implement the mapping and transformation of Wachtel using database update such that applying the query processing by Lindberg so to retrieve one source relational database table; and applying the query to the at least one source relational database table to

populate at least one target relational database table according to the suggested update technique by Wachtel because without update data on record would not be appropriate for subsequent queries and might generate data errors.

As per claims 56-69, these claims correspond to claims 20-33 respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claims 72-73, these claims integrate the limitations of claims 9-10: one data schema is at least one table schema describing data tables having columns, one table schema is at least one relational database schema describing relational database tables. Hence these claims are rejected using the rejections as set forth therein correspondingly.

As per claim 74, Wachtel (in view of Lindberg) discloses providing an initial ontology model; identifying and adding classes (*class* – col. 11, lines 45 to col. 12, line 19) to the initial ontology model corresponding to tables described in the at least one relational database schema; and adding properties (Fig. 6-7) to the initial ontology model corresponding to columns described in the at least one relational database schema (Note: assimilating data and properties from a schema to a ontology instance reads on adding class and properties in light of the structures of the database columns and their mapping with the schema elements).

As per claims 75-77, refer to rationale of claims 6-7.

As per claims 78, 80, and 82, Wachtel(combined with Lindberg) discloses adding classes is performed by a computer in conjunction with a user (col. 11, lines 45 to col. 12, line 19; Fig. 1-3, 10 – Note: the adding of properties to a model being run by code, hence performed by a program automatically).

As per claims 79 and 81, Wachtel discloses a user interface to enable assembling of properties into the model according to some mapping and Lindberg discloses performing such mapping by invoking DB table and column to fulfill the query. Based on the use of oncology framework and user entry thus recognized in conjunction with the update of DB as mentioned in claim 53, the creating of new table or class in a database would have been desirable. Hence it would have been obvious for one skill in the art at the time the invention was made to implement the ontology assembling and user-driven adding of classes by Wachtel so that prompting for adding classes to the ontology model when there is a table does not correspond to an existing class in the ontology model; and when a table does not correspond to an existing class in the ontology model because of the desirable intent to create data as needed as viewed as desirable from above.

As per claim 83, the limitation as to prompt to add a property to the ontology model when there is a table column described in the at least one relational database schema that does not correspond to an existing property or composition of properties in the ontology model, would have been obvious for the same rationale as set forth above in claims 79 and 81.

As per claim 84, refer to claim 80.

As per claim 85, the limitation as to add a property to the ontology model when there is a table that does not correspond to an existing property in the composition of the model, would have been obvious for the same rationale as set forth above in claims 79 and 81.

As per claim 86, Wachtel discloses wherein said building an ontology model comprises inferring inheritance relationships between classes in the ontology model (Fig. object 112, Fig. 3;

Fig. 4-5,6-7) but in view of the combination with Lindberg also discloses class relationships based on relationships between tables described in the at least one relational database schema.

As per claim 87, inherence from first class to second class by way of a key in database would have been disclosed in Lindberg by very nature of RDBM.

As per claim 88, Wachtel does not disclose wherein said inferring of inheritance relationships includes prompting a user to confirm an inferred inheritance relationship. Official notice is taken that interactive tool enabling user to confirm on the UI design of elements was a known concept in the art. In view of the ontology aspect of Wachtel, i.e. a model based notably an interactive assembling of components driven by user, this limitation would have been obvious because of a confirmation by the user would enable the model to be founded on well-controlled inheritance construct thereby avert compiling exceptions when output code is translated.

As per claims 89-90, refer to rejection of claims 20, 24 respectively.

As per claim 91, this claim incorporates the limitations of claims 74-75, 90; hence is rejected with the rationale or obviousness as set forth in those claims.

As per claims 92-94, refer to rejection of claims 75-76, 78.

As per claim 95, this claim integrates the limitations as addressed in rejection of claims 79, 81, 90-91; hence is rejected or obvious in conjunction with the rejection as set forth in those claims in combination.

As per claim 96 and 98, refer to claims 80 and 78, respectively.

As per claims 97, 99, and 101, the limitations as to automatically add a class when there is an XML complexType that does not correspond to an existing class in the ontology model (re claim 97); to add a property when there is an XML element or an XML attribute that does not

correspond to an existing property or composition in the ontology model (re claim 99); and to automatically add a property when there is an XML element or an XML attribute that does not correspond to an existing property or composition of properties in the ontology model (re claim 101) are corresponding obvious variations of claims 79, 83, 85, in light of claims 91 and 95; hence the claims are rejected with the combined rationale of those claims.

As per claim 100, refer to claim 84.

As per claims 102-119, these claims correspond to claims 70-87, respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

As per claims 120-121, prompting for confirmation and computer tool ensuring that inheritance obeys falls under the rules and internal processes established by the relational database relationships underlying the interactive setting of a modeling tool as set forth in claim 88; hence these claims would have been obvious in light of the rationale as set forth in claim 88.

As per claims 122-134, these claims correspond to claims 84-101, respectively; hence are rejected with the corresponding rejections as set forth therein respectively.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (272) 272-3735. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)272-3719.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3735 (for non-official correspondence – please consult Examiner before

using) or 571-273-8300 (for official correspondence) or redirected to customer service at 571-272-3609.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VAT
September 17, 2005

ANIL KHATRI
PRIMARY EXAMINER